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09/693,297	10/19/2000	Gregory L. Slaughter	5181-64300	8427

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EXAMINER	
LAZARO, DAVID R	

ART UNIT	PAPER NUMBER
2155	6

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/693,297	SLAUGHTER ET AL.	
	Examiner	Art Unit	
	David Lazaro	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/19/00* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4,5*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claims 1-55 are pending in this Office Action.

Papers Received

1. Power of Attorney and Revocation of previous powers was received on 04/09/01. Notice of acceptance mailed on 04/12/01.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on 07/12/01 (#4a), 07/23/01 (#4b) and on 09/15/01 have been considered by the examiner.

Priority

3. This application claims the benefit of the following provisional applications: 60/202975, 60/208011, 60/209430, 60/209140, 60/209525

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 42 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 42 recites the limitation "said second device" on page 210 line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 2, 4, 5, 10, 11, 14, 15, 17-19, 21, 22, 27, 28, 30-32, 37, 38, 40-43, 45, 46, 48, 50, 52, 54 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,216,158 by Luo et al. (Luo) in view of U.S. Patent 6,377,913 by Coffman et al. (Coffman).

9. Please note that all citations refer to Luo unless explicitly stated otherwise.

10. With respect to Claim 1, Luo teaches a method for displaying results data in a distributed computing environment (Col. 3 lines 41-67), comprising: establishing a first messaging channel between a client and a first service in the distributed computing environment (Col. 4 lines 30-53 and Col. 6 lines 22-27); the client sending a first message to the first service on the first messaging channel (Col. 6 lines 22-27), the first service accessing the display service advertisement (Col. 6 lines 45-48 and lines 10-27) ; and the first service establishing a second messaging channel between the first service and the display service in accordance with the display service advertisement (Col. 4 line 54 – Col. 5 line 8 and Col. 6 lines 22-27). Luo does not explicitly disclose the client specifying the display advertisement for the first service to use. However, it is well known in the art that a client can specify the display service to use as shown by Coffman (Col.

5 lines 1-10 of Coffman). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the method disclosed by Luo and modify it as indicated by Coffman such that the first message specifies a display service advertisement for enabling access to a display service associated with the client; the first service accessing the display service advertisement as specified in the first message; and the first service establishing a second messaging channel between the first service and the display service in accordance with the display service advertisement. One would be motivated to have this as it allows client devices to have results of a service displayed when the graphical capabilities of the client input device are not sufficient or non-existent (Col. 4 line 58 – Col. 5 line 6 of Coffman).

11. With respect to Claim 2, Luo in view of Coffman teaches all the limitations of Claim 1 and further teaches the first messaging channel is configured to pass messages in a data representation language between the client and the first service (Col. 4 lines 30-53), and wherein the second messaging channel is configured to pass messages in the data representation language between the first service and the display service (Col. 4 line 54 – Col. 5 line 8).

12. With respect to Claim 4, Luo in view of Coffman teaches all the limitations of Claim 1 and further teaches the first service sending one or more data messages to the display service on the second messaging channel (Col. 8 lines 53-64), wherein the one or more data messages include data for the client (Col. 6 lines 24-27); and the display service displaying the data from the one or more data messages on a display of the client (Col. 8 lines 53-64).

13. With respect to Claim 5, Luo in view of Coffman teaches all the limitations of Claim 1 and further teaches the first service establishing a second messaging channel comprises the first service generating a first service message endpoint, wherein the first service message endpoint: is configured to send messages to and receive messages from a display service message endpoint of the display service (Col. 4 line 54 – Col. 5 line 8).

14. With respect to Claim 10, Luo in view of Coffman teaches all the limitations of Claim 1 and further teaches the client sending a second message to the first service on the first messaging channel, wherein the second message requests the first service to perform a function on behalf of the client (Col. 7 lines 48-54); and the first service performing; the function as requested by the client, wherein said performing the function produces results data (Col. 7 lines 54-59).

15. With respect to Claim 11, Luo in view of Coffman teaches all the limitations of Claim 10 and further teaches the first service sending one or more results data messages to the display service on the second messaging channel, wherein the one or more results data messages include the results data produced by said performing the function; and the display service displaying the results data from the one or more results data messages on a display of the client (Col. 7 lines 48-59).

16. With respect to Claim 14, Luo in view of Coffman teaches all the limitations of Claim 1 and further teaches the display service advertisement is on a storage device in the distributed computing environment (Col. 6 lines 9-21), wherein the first message includes information for accessing the display service

advertisement on the storage device through a space service (Col. 6 lines 45-59 of Luo and Col. 5 lines 1-10 of Coffman).

17. With respect to Claim 15, Luo in view of Coffman teaches all the limitations of Claim 14 and further teaches the first service accessing the display service advertisement comprises accessing the display service advertisement from the storage device through the space service (Col. 6 lines 9-21).

18. With respect to Claim 17, Luo in view of Coffman teaches all the limitations of Claim 1 and further teaches the client is executing within a first device in the distributed computing environment, and wherein the display service is executing within a second device in the distributed computing environment (Col. 3 lines 55-59).

19. With respect to Claim 18, Luo teaches a distributed computing system (Col. 3 lines 21-40), comprising: a first device configured to provide a first service accessible within the distributed computing system (Col. 3 lines 51 and 55-59); and a second device configured to: provide a display service accessible within the distributed computing system (Col. 3 lines 54 and 55-59); and provide a client process accessible within the distributed computing system (Col. 3 lines 45-50 and 55-59); wherein the client process is configured to: establish a first messaging channel between the client process and the first service in the distributed computing environment (Col. 4 lines 30-53 and Col. 6 lines 22-27); and send a first message to the first service on the first messaging channel (Col. 6 lines 22-27), wherein the first service is configured to access the display service advertisement (Col. 6 lines 45-48 and 10-27); and establish a second

messaging channel between the first service and the display service in accordance with the display service advertisement (Col. 4 line 54 - Col. 5 line 8 and Col. 6 lines 22-57). Luo does not explicitly disclose the client specifying the display advertisement for the first service to use. However, it is well known in the art that a client can specify the display service to use as shown by Coffman (Col. 5 lines 1-10 of Coffman). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the system disclosed by Luo and modify it as indicated by Coffman such that the first message specifies a display service advertisement for enabling access to the display service; wherein the first service is configured to: access the display service advertisement as specified in the first message; and establish a second messaging channel between the first service and the display service in accordance with the display service advertisement. One would be motivated to have this as it allows client devices to have results of a service displayed when the graphical capabilities of the client input device are not sufficient or non-existent (Col. 4 line 58 – Col. 5 line 6 of Coffman).

20. With respect to Claim 19, Luo in view of Coffman teaches all the limitations of Claim 18 and further teaches the first messaging channel is configured to pass messages in a data representation language between the client and the first service (Col. 4 lines 30-53), and wherein the second messaging channel is configured to pass messages in the data representation language between the first service and the display service (Col. 4 line 54 – Col. 5 line 8).

21. With respect to Claim 21, Luo in view of Coffman teaches all the limitations of Claim 18 and further teaches the second device comprises a display (Col. 3 lines 54-59), wherein the first service is configured to send one or more data messages to the display service on the second messaging channel (Col. 8 lines 53-64), wherein the one or more data messages include data for the client process (Col. 6 lines 24-27); and the display service is further configured to display the data from the one or more data messages on a display of the second device (Col. 8 lines 53-64).

22. With respect to Claim 22, Luo in view of Coffman teaches all the limitations of Claim 18 and further teaches in said establishing a second messaging channel comprises, the first service is further configured to generate a first service message endpoint, wherein the first service message endpoint: is configured to send messages to and receive messages from the display service (Col. 4 line 54 – Col. 5 line 8).

23. With respect to Claim 27, Luo in view of Coffman teaches all the limitations of Claim 18 and further teaches the client process is further configured to send a second message to the first service on the first messaging channel, wherein the second message requests the first service to perform a function on behalf of the client (Col. 7 lines 48-54); and the first service is further configured to perform the function as requested by the client, wherein said performing the function produces results data (Col. 7 lines 54-59).

24. With respect to Claim 28, Luo in view of Coffman teaches all the limitations of Claim 27 and further teaches the first service is further configured to

send one or more results data messages to the display service on the second messaging channel, wherein the one or more results data messages include the results data produced by said performing the function, and wherein the display service is further configured to display the results data from the one or more results data messages on a display of the second device (Col. 7 lines 48-59).

25. With respect to Claim 30, Luo in view of Coffman teaches all the limitations of Claim 18 and further teaches a fourth device configured to provide a space service accessible within the distributed computing system, wherein the display service advertisement is stored on the fourth device (Col. 6 lines 9-21); wherein the first message includes information for accessing the display service advertisement on the fourth device through the space service; and wherein, in accessing the display service advertisement, the first service is further configured to access the display service advertisement from the fourth device through the space service (Col. 6 lines 45-59 of Luo and Col. 5 lines 1-10 of Coffman).

26. With respect to Claim 31, Luo teaches a distributed computing system (Col. 3 lines 21-40), comprising: a first device configured to provide a first service accessible within the distributed computing system (Col. 3 lines 51 and 55-59); and a second device configured to: provide a display service accessible within the distributed computing system (Col. 3 lines 54 and 55-59); and
a client device (Col. 3 lines 1-11), configured to establish a first messaging channel between the client device and the first service in the distributed computing environment (Col. 4 lines 30-53 and Col. 6 lines 22-27); and send a first message to the first service on the first messaging channel (Col. 6 lines 22-

27), wherein the first service is configured to access the display service advertisement (Col. 6 lines 45-48 and 10-27); and establish a second messaging channel between the first service and the display service in accordance with the display service advertisement (Col. 4 line 54 - Col. 5 line 8 and Col. 6 lines 22-57). Luo does not explicitly disclose the client specifying the display advertisement for the first service to use. However, it is well known in the art that a client can specify the display service to use as shown by Coffman (Col. 5 lines 1-10 of Coffman). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the system disclosed by Luo and modify it as indicated by Coffman such that the first message specifies a display service advertisement for enabling access to the display service; wherein the first service is configured to: access the display service advertisement as specified in the first message; and establish a second messaging channel between the first service and the display service in accordance with the display service advertisement. One would be motivated to have this as it allows client devices to have results of a service displayed when the graphical capabilities of the client input device are not sufficient or non-existent (Col. 4 line 58 – Col. 5 line 6 of Coffman).

27. With respect to Claim 32, Luo in view of Coffman teaches all the limitations of Claim 31 and further teaches the second device comprises a display (Col. 3 lines 54-59), wherein the first service is configured to send one or more data messages to the display service on the second messaging channel (Col. 8 lines 53-64), wherein the one or more data messages include data for the client process (Col. 6 lines 24-27); and the display service is further configured to

display the data from the one or more data messages on a display of the second device (Col. 8 lines 53-64).

28. With respect to Claim 37, Luo in view of Coffman teaches all the limitations of Claim 31 and further teaches the client process is further configured to send a second message to the first service on the first messaging channel, wherein the second message requests the first service to perform a function on behalf of the client (Col. 7 lines 48-54); and the first service is further configured to perform the function as requested by the client, wherein said performing the function produces results data (Col. 7 lines 54-59).

29. With respect to Claim 38, Luo in view of Coffman teaches all the limitations of Claim 37 and further teaches the first service is further configured to send one or more results data messages to the display service on the second messaging channel, wherein the one or more results data messages include the results data produced by said performing the function, and wherein the display service is further configured to display the results data from the one or more results data messages on a display of the second device (Col. 7 lines 48-59).

30. With respect to Claim 40, Luo in view of Coffman teaches all the limitations of Claim 31 and further teaches a fourth device configured to provide a space service accessible within the distributed computing system, wherein the display service advertisement is stored on the fourth device (Col. 6 lines 9-21); wherein the first message includes information for accessing the display service advertisement on the fourth device through the space service; and wherein, in accessing the display service advertisement, the first service is further configured

to access the display service advertisement from the fourth device through the space service (Col. 6 lines 45-59 of Luo and Col. 5 lines 1-10 of Coffman).

31. With respect to Claim 41, Luo teaches a device, comprising: a display service accessible within a distributed computing system (Col. 3 lines 54 and 55-59); and a client process accessible within the distributed computing system (Col. 4 lines 30-53); wherein the client process is configured to: establish a first messaging channel between the client process and a first service in the distributed computing environment (Col. 6 lines 22-27); and send a first message to the first service on the first messaging channel, wherein the first service is operable to establish a second messaging channel between the first service and the display service (Col. 6 lines 45-48 and lines 10-27). Luo does not explicitly disclose the first message specifying the display service advertisement the first service should use. However, it is well known in the art that a client can specify the display service to use as shown by Coffman (Col. 5 lines 1-10 of Coffman). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the device disclosed by Luo and modify it as indicated by Coffman such that the first message specifies a display service advertisement for enabling access to the display service; wherein the first service is operable to establish a second messaging channel between the first service and the display service in accordance with the display service advertisement. One would be motivated to have this as it allows client devices to have results of a service displayed when the graphical capabilities of the client input device are not sufficient or non-existent (Col. 4 line 58 – Col. 5 line 6 of Coffman).

32. With respect to Claim 42, Luo in view of Coffman teaches all the limitations of Claim 41 and further teaches the device comprises a display (Col. 3 lines 54-59), wherein the display service is configured to receive one or more data messages on the second messaging channel (Col. 8 lines 53-64), wherein the one or more data messages include data generated by the first service for the client process (Col. 6 lines 24-27); and display the data in the one or more data messages on a display of the device (Col. 8 lines 53-64).

33. With respect to Claim 43, Luo in view of Coffman teaches all the limitations of Claim 41 and further teaches the client process is further configured to send a second message to the first service on the first messaging channel, wherein the second message requests the first service to perform a function on behalf of the client process (Col. 7 lines 48-54); and the display service is further configured to display results data on the display of the second device (Col. 8 lines 54-64), wherein the first service performing the function generates the results data, and wherein the results data are received in one or more results data messages sent to the display service by the first service on the second messaging channel (Col. 7 lines 54-59).

34. With respect to Claim 45, Luo teaches a device, comprising:

35. a display (Col. 3 lines 54); and a display service accessible within a distributed computing system (Col. 3 lines 54 and 55-59); wherein the display service is configured to provide a display service advertisement for enabling access to the display service to a client in the distributed computing environment (Col. 5 lines 43-56); wherein the first service is operable to establish a

messaging channel between the first service and the display service in accordance with the display service advertisement (Col. 6 lines 45-48 and lines 10-27). Luo does not explicitly disclose the client providing the display service advertisement to the first service. However, it is well known in the art that one can have the client provide the display of choice as shown by Coffman (Col. 5 lines 1-10 of Coffman). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the device disclosed by Luo and modify it as indicated by Coffman such that the client is operable to provide the display service advertisement to a first service in the distributed computing environment. One would be motivated to have this as it allows client devices to have results of a service displayed when the graphical capabilities of the client input device are not sufficient or non-existent (Col. 4 line 58 – Col. 5 line 6 of Coffman).

36. With respect to Claim 46, Luo in view of Coffman teaches all the limitations of Claim 45 and further teaches the display service is configured to receive one or more data messages on the second messaging channel (Col. 8 lines 53-64), wherein the one or more data messages include data generated by the first service for the client process (Col. 6 lines 24-27); and display the data in the one or more data messages on a display of the device (Col. 8 lines 53-64).

37. With respect to Claim 48, Luo teaches a carrier medium comprising program instructions, wherein the program instructions are computer-executable to implement: establishing a first messaging channel between a client and a first service in a distributed computing environment (Col. 6 lines 22-27), wherein the

first messaging channel is configured to pass messages in a data representation language between the client and the first service (Col. 4 lines 30-53); the client sending a first message to the first service on the first messaging channel (Col. 6 lines 22-27), the first service accessing a display service advertisement (Col. 6 lines 45-48 and 10-27); and the first service establishing a second messaging channel between the first service and the display service in accordance with the display service advertisement (Col. 6 lines 22-57) wherein the second messaging channel is configured to pass messages in the data representation language between the first service and the display service (Col. 4 line 54 – Col. 5 line 8). Luo does not explicitly disclose the first message specifying the display service advertisement the first service should use. However, it is well known in the art that a client can specify the display service to use as shown by Coffman (Col. 5 lines 1-10 of Coffman). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the program instructions on a carrier medium disclosed by Luo and modify it as indicated by Coffman such that the first message specifies a display service advertisement for enabling access to the display service; the first service accessing the display service advertisement specified in the first message, and the first service establishing a second messaging channel between the first service and the display service in accordance with the display service advertisement wherein the second messaging channel is configured to pass messages in the data representation language between the first service and the display service. One would be motivated to have this as it allows client devices to have results of a service

displayed when the graphical capabilities of the client input device are not sufficient or non-existent (Col. 4 line 58 – Col. 5 line 6 of Coffman).

38. With respect to Claim 50, Luo in view of Coffman teaches all the limitations of Claim 48 and further teaches the first service sending one or more data messages to the display service on the second messaging channel (Col. 8 lines 53-64), wherein the one or more data messages include data for the client (Col. 6 lines 24-27); and the display service displaying the data from the one or more data messages on a display of the client (Col. 8 lines 53-64).

39. With respect to Claim 52, Luo in view of Coffman teaches all the limitations of Claim 48 and further teaches the client sending a second message to the first service on the first messaging channel, wherein the second message requests the first service to perform a function on behalf of the client (Col. 7 lines 48-54); and the first service performing; the function as requested by the client, wherein said performing the function produces results data (Col. 7 lines 54-59), the first service sending one or more results data messages to the display service on the second messaging channel, wherein the one or more results data messages include the results data produced by said performing the function; and the display service displaying the results data from the one or more results data messages on a display of the client (Col. 7 lines 48-59).

40. With respect to Claim 54, Luo in view of Coffman teaches all the limitations of Claim 48 and further teaches the display service advertisement is on a storage device in the distributed computing environment (Col. 6 lines 9-21), wherein the first message includes information for accessing the display service

advertisement on the storage device through a space service (Col. 6 lines 45-59 of Luo and Col. 5 lines 1-10 of Coffman), the first service accessing the display service advertisement comprises accessing the display service advertisement, the program instructions are further computer-executable to implement accessing the display service advertisement from the storage device through the space service (Col. 6 lines 9-21).

41. Claims 3, 6-9, 16, 20, 23-26, 33-36, 49, 51 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luo in view of Coffman as applied to Claims 1 and 2 above, and further in view of "Composable ad hoc location-based services for heterogeneous mobile clients" by Hodes et al. (Hodes).

42. With respect to Claim 3, Luo in view of Coffman teaches all the limitations of Claim 2 but does not teach the data representation language is eXtensible Markup Language (XML). Hodes teaches in a similar network implementing downloadable service interfaces the data representation language used in communications is XML (Page 418, section 3.7.1. "Motivating Interface Specifications", and see Footnote 2 on the same page). It would have been obvious to one of ordinary skill to take the method disclosed by Luo in view of Coffman and modify it as indicated by Hodes such that the data representation language is eXtensible Markup Language (XML). One would be motivated to have this as clients may resource limited and use of XML can relieve some of the processing burden off of the client (Page 418, section 3.7.1. "Motivating Interface Specifications").

43. With respect to Claim 6, Luo in view of Coffman teaches all the limitations of Claim 1 and further teaches data messages are generated by the first service and sent to the display, including data for the client (Col. 7 lines 55-59), but does not explicitly disclose the display service advertisement having a message schema for describing data messages for sending data to the display service. However, Hodes shows it is well known in the art that a service advertisement can include a message schema describing how the data messages should be formed (Page 418, section 3.7.1. "Motivating Interface Specifications", and see Footnote 2 on the same page). It would have been obvious to one of ordinary skill to take the method disclosed by Luo in view of Coffman and modify it as indicated by Hodes such that the display service advertisement comprises: a message schema comprising descriptions of data messages for sending data to the display service; and wherein the method further comprises the first service generating one or more data messages in accordance with descriptions of the one or more data messages comprised in the descriptions of data messages, wherein the one or more data messages include data for the client. One would be motivated to have this since as it allows clients to generate messages even if the capabilities of the client cannot handle a given language implementation (Page 418, section 3.7.1. "Motivating Interface Specifications").

44. With respect to Claim 7, Luo in view of Coffman and in further view of Hodes further teaches the display service receiving the one or more data messages from the first service; and the display service displaying the data

included in the one or more data messages on a display of the client (Col. 8 lines 53-64 of Luo).

45. With respect to Claim 8, Luo in view of Coffman and in further view of Hodes further teaches an address for the display service to receive messages in the distributed computing environment; wherein the method further comprises the first service sending the one or more data message to the address for the display service to receive messages (Col. 8 lines 53-64 of Luo).

46. With respect to Claim 9, Luo in view of Coffman and in further view of Hodes further teaches the address is a Uniform Resource Identifier (URI) (Col. 8 lines 53-64 and Col. 9 lines 23-26 of Luo).

47. With respect to Claim 16, Luo in view of Coffman and in further view of Hodes further teaches the display service advertisement is an eXtensible Markup Language (XML) (Page 418, section 3.7.1. "Motivating Interface Specifications", and see Footnote 2 on the same page).

48. With respect to Claim 20, Luo in view of Coffman teaches all the limitations of Claim 19 but does not teach the data representation language is eXtensible Markup Language (XML). Hodes teaches in a similar network implementing downloadable service interfaces the data representation language used in communications is XML (Page 418, section 3.7.1. "Motivating Interface Specifications", and see Footnote 2 on the same page). It would have been obvious to one of ordinary skill to take the system disclosed by Luo in view of Coffman and modify it as indicated by Hodes such that the data representation language is eXtensible Markup Language (XML). One would be motivated to

have this as clients may resource limited and use of XML can relieve some of the processing burden off of the client (Page 418, section 3.7.1. "Motivating Interface Specifications").

49. With respect to Claim 23, Luo in view of Coffman teaches all the limitations of Claim 18 and further teaches data messages are generated by the first service and sent to the display, including data for the client process (Col. 7 lines 55-59), but does not explicitly disclose the display service advertisement having a message schema for describing data messages for sending data to the display service. However, Hodes shows it is well known in the art that a service advertisement can include a message schema describing how the data messages should be formed (Page 418, section 3.7.1. "Motivating Interface Specifications", and see Footnote 2 on the same page). It would have been obvious to one of ordinary skill to take the system disclosed by Luo in view of Coffman and modify it as indicated by Hodes such that the display service advertisement comprises: a message schema comprising descriptions of data messages for sending data to the display service; and wherein the first service is further configured to generate one or more data messages in accordance with descriptions of the one or more data messages comprised in the descriptions of data messages, wherein the one or more data messages include data for the client process. One would be motivated to have this since as it allows clients to generate messages even if the capabilities of the client cannot handle a given language implementation (Page 418, section 3.7.1. "Motivating Interface Specifications").

50. With respect to Claim 24, Luo in view of Coffman and in further view of Hodes further teaches the second device comprises a display wherein the display service is further configured to receive the one or more data messages; and display the data included in the one or more data messages on a display of the second device (Col. 8 lines 53-64 of Luo).

51. With respect to Claim 25, Luo in view of Coffman and in further view of Hodes further teaches the display service advertisement further comprises an address for the display service to receive messages in the distributed computing environment; wherein the first service is further configured to send the one or more data message to the address for the display service to receive messages (Col. 8 lines 53-64 of Luo).

52. With respect to Claim 26, Luo in view of Coffman and in further view of Hodes further teaches the address is a Uniform Resource Identifier (URI) (Col. 8 lines 53-64 and Col. 9 lines 23-26 of Luo).

53. With respect to Claim 33, Luo in view of Coffman teaches all the limitations of Claim 31 and further teaches data messages are generated by the first service and sent to the display, including data for the client device (Col. 7 lines 55-59), but does not explicitly disclose the display service advertisement having a message schema for describing data messages for sending data to the display service. However, Hodes shows it is well known in the art that a service advertisement can include a message schema describing how the data messages should be formed (Page 418, section 3.7.1. "Motivating Interface Specifications", and see Footnote 2 on the same page). It would have been

obvious to one of ordinary skill to take the system disclosed by Luo in view of Coffman and modify it as indicated by Hodes such that the display service advertisement comprises: a message schema comprising descriptions of data messages for sending data to the display service; and wherein the first service is further configured to generate one or more data messages in accordance with descriptions of the one or more data messages comprised in the descriptions of data messages, wherein the one or more data messages include data for the client device. One would be motivated to have this since as it allows clients to generate messages even if the capabilities of the client cannot handle a given language implementation (Page 418, section 3.7.1. "Motivating Interface Specifications").

54. With respect to Claim 34, Luo in view of Coffman and in further view of Hodes further teaches the second device comprises a display wherein the display service is further configured to receive the one or more data messages; and display the data included in the one or more data messages on a display of the second device (Col. 8 lines 53-64 of Luo).

55. With respect to Claim 35, Luo in view of Coffman and in further view of Hodes further teaches the display service advertisement further comprises an address for the display service to receive messages in the distributed computing environment; wherein the first service is further configured to send the one or more data message to the address for the display service to receive messages (Col. 8 lines 53-64 of Luo).

56. With respect to Claim 36, Luo in view of Coffman and in further view of Hodes further teaches the address is a Uniform Resource Identifier (URI) (Col. 8 lines 53-64 and Col. 9 lines 23-26 of Luo).

57. With respect to Claim 49, Luo in view of Coffman teaches all the limitations of Claim 48 but does not teach the data representation language is eXtensible Markup Language (XML). Hodes teaches in a similar network implementing downloadable service interfaces the data representation language used in communications is XML (Page 418, section 3.7.1. "Motivating Interface Specifications", and see Footnote 2 on the same page). It would have been obvious to one of ordinary skill to take the method disclosed by Luo in view of Coffman and modify it as indicated by Hodes such that the data representation language is eXtensible Markup Language (XML). One would be motivated to have this as clients may resource limited and use of XML can relieve some of the processing burden off of the client (Page 418, section 3.7.1. "Motivating Interface Specifications").

58. With respect to Claim 51, Luo in view of Coffman teaches all the limitations of Claim 48 and further teaches data messages are generated by the first service and sent to the display, including data for the client device (Col. 7 lines 55-59), but does not explicitly disclose the display service advertisement having a message schema for describing data messages for sending data to the display service. However, Hodes shows it is well known in the art that a service advertisement can include a message schema describing how the data messages should be formed (Page 418, section 3.7.1. "Motivating Interface

Specifications", and see Footnote 2 on the same page). It would have been obvious to one of ordinary skill to take the system disclosed by Luo in view of Coffman and modify it as indicated by Hodes such that the display service advertisement comprises: a message schema comprising descriptions of data messages for sending data to the display service; and an address for the display service receiving the data messages. wherein the program instructions are further computer-executable to implement: the first service generating one or more data messages in accordance with descriptions of the one or more data messages comprised in the descriptions of data messages, wherein the one or more data messages include data for the client; the first service sending the one or more data message to the address for the display service receiving the data messages; the display service receiving the one or more data messages; and the display service displaying the data included in the one or more data messages on a display of the client. One would be motivated to have this since as it allows clients to generate messages even if the capabilities of the client cannot handle a given language implementation (Page 418, section 3.7.1. "Motivating Interface Specifications").

59. With respect to Claim 55, Luo in view of Coffman teaches all the limitations of Claim 48 but does not teach the the display service advertisement is an eXtensible Markup Language (XML) document. Hodes teaches in a similar network implementing downloadable service interfaces the service advertisements for interfaces can be described XML (Page 418, section 3.7.1. "Motivating Interface Specifications", and see Footnote 2 on the same page). It

would have been obvious to one of ordinary skill to take the method disclosed by Luo in view of Coffman and modify it as indicated by Hodes such that the display service advertisement is an eXtensible Markup Language (XML) document. One would be motivated to have this as clients may resource limited and use of XML can relieve some of the processing burden off of the client (Page 418, section 3.7.1. "Motivating Interface Specifications").

60. Claims 12, 13, 29, 39, 44, 47 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luo in view of Coffman as applied above, and further in view of U.S. Patent 6,466,978 by Mukherjee et al. (Mukherjee).

61. With respect to Claim 12, Luo in view of Coffman teaches all the limitations of Claim 10 but does not explicitly disclose storing results of a service on a results space in the distributed computing environment. However, it is well known in the art that in a distributed computing environment data can be stored on a results space as shown by Mukherjee (Col. 4 lines 57-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the method disclosed by Luo in view of Coffman and modify it as indicated by Mukherjee such that the first service stores results data on a results space in the distributed computing environment. One would be motivated to have this as it reduces the burden on the resources and bandwidth of the service (Col. 4 lines 57-66).

62. With respect to Claim 13, Luo in view of Coffman and in further view of Coffman further teaches the first service sending a results message to the

display service on the second messaging channel, wherein the results message specifies a results advertisement for accessing the results data stored on the results space; the display service accessing the results data from the results space in accordance with the results advertisement (Col. 8 lines 10-13); and the display service displaying the results data on a display of the client (Col. 8 lines 54-64).

63. With respect to Claim 29, Luo in view of Coffman teaches all the limitations of Claim 27 and further teaches the second device comprises a display that will display results data (Col. 8 lines 54-64 of Luo) but does not explicitly disclose storing the results on a space service in a distributed computing environment and having the display service access the results through the space service. However, it is well known in the art that in a distributed computing environment data can be stored and accessed on a results space as shown by Mukherjee (Col. 4 lines 57-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the system disclosed by Luo in view of Coffman and modify it as indicated by Mukherjee such that a third device configured to provide a results space service accessible within the distributed computing system; wherein the second device comprises a display; wherein the first service is further configured to: store the results data on the third device through the results space service; send a results message to the display service on the second messaging channel, wherein the results message specifies a results advertisement for accessing the results data stored on the third device; wherein the display service is further configured to:

access the results data from the third device through the results space service in accordance with the results advertisement; and display the results data on the display of the second device.. One would be motivated to have this as it reduces the burden on the resources and bandwidth of the service (Col. 4 lines 57-66). With respect to Claim 39, Luo in view of Coffman teaches all the limitations of Claim 37 and further teaches the second device comprises a display that will display results data (Col. 8 lines 54-64 of Luo) but does not explicitly disclose storing the results on a space service in a distributed computing environment and having the display service access the results through the space service. However, it is well known in the art that in a distributed computing environment data can be stored and accessed on a results space as shown by Mukherjee (Col. 4 lines 57-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the system disclosed by Luo in view of Coffman and modify it as indicated by Mukherjee such that a third device configured to provide a results space service accessible within the distributed computing system; wherein the second device comprises a display; wherein the first service is further configured to: store the results data on the third device through the results space service; send a results message to the display service on the second messaging channel, wherein the results message specifies a results advertisement for accessing the results data stored on the third device; wherein the display service is further configured to: access the results data from the third device through the results space service in accordance with the results advertisement; and display the results data on the display of the second device.

One would be motivated to have this as it reduces the burden on the resources and bandwidth of the service (Col. 4 lines 57-66).

64. With respect to Claim 44, Luo in view of Coffman teaches all the limitations of Claim 41 Luo in view of Coffman teaches all the limitations of Claim 37 and further teaches the device comprises a display that will display results data (Col. 8 lines 54-64 of Luo) but does not explicitly disclose storing the results on a space service in a distributed computing environment and having the display service access the results through the space service. However, it is well known in the art that in a distributed computing environment data can be stored and accessed on a results space as shown by Mukherjee (Col. 4 lines 57-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the device disclosed by Luo in view of Coffman and modify it as indicated by Mukherjee such that the device further comprises a display;wherein the client process is further configured to send a second message to the first service on the first messaging channel, wherein the second message requests the first service to perform a function on behalf of the client process; and wherein the first service performing the function for the client generates results data, wherein the first service stores the results data to a results space and wherein the display service is further configured to: access the results data from the results space; and display the results data for the client on the display of the device. One would be motivated to have this as it reduces the burden on the resources and bandwidth of the service (Col. 4 lines 57-66).

65. With respect to Claim 47, Luo in view of Coffman teaches all the limitations of Claim 45 and further teaches the device comprises a display that will display results data (Col. 8 lines 54-64 of Luo) but does not explicitly disclose storing the results on a space service in a distributed computing environment and having the display service access the results through the space service. However, it is well known in the art that in a distributed computing environment data can be stored and accessed on a results space as shown by Mukherjee (Col. 4 lines 57-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the device disclosed by Luo in view of Coffman and modify it as indicated by Mukherjee such that results data are generated by the first service performing a function for the client, wherein the first service stores the results data to a results space, and wherein the display, service is further configured to: access the results data from the results space; and display the results data for the client on the display of the device. One would be motivated to have this as it reduces the burden on the resources and bandwidth of the service (Col. 4 lines 57-66).

66. With respect to Claim 53, Luo in view of Coffman teaches all the limitations of Claim 52 and further teaches the display service will display results data provided by the first service(Col. 8 lines 54-64 of Luo) but does not explicitly disclose storing the results on a space service in a distributed computing environment and having the display service access the results through the space service. However, it is well known in the art that in a distributed computing environment data can be stored and accessed on a results space as shown by

Mukherjee (Col. 4 lines 57-66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the device disclosed by Luo in view of Coffman and modify it as indicated by Mukherjee such that the program instructions are further computer-executable to implement: the first service storing the results data on a results space in the distributed computing environment; the first service sending a results message to the display service on the second messaging channel, wherein the results message specifies a results advertisement for accessing the results data stored on the results space; the display service accessing the results data from the results space in accordance with the results advertisement; and the display service displaying the results data on a display of the client. One would be motivated to have this as it reduces the burden on the resources and bandwidth of the service (Col. 4 lines 57-66).

Conclusion

67. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

68. U.S. Patent 6,662,224 by Angwin et al. "Methods, systems and computer program products for providing alternative displays for networked devices" December 9, 2003

69. U.S. Patent 6,642,941 by Kurata et al. "Displaying Optimum Screens on Various Types of Output Terminals Using a Common Application" November 4, 2003

70. U.S. Patent 6,546,419 by Humpleman et al. "Method and apparatus for user and device command and control in a network" April 8, 2003

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lazaro whose telephone number is 703-305-4868. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 703-308-6662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

David Lazaro
January 8, 2004

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER